

REMARKS/ARGUMENTS

Reconsideration is respectfully requested of the Official Action of June 2, 2004, relating to the above-identified application.

A Declaration and Power of Attorney executed by the inventors updating their addresses is enclosed.

The Examiner is thanked for his suggestions on claim language and, accordingly, Claims 34-60 have been amended as recommended on page 2 of the Official Action. New Claim 61 is presented herewith to make certain that all aspects of the invention are claimed.

The filing fee for an additional dependent claim is attached.

The rejection of Claims 34-60, as allegedly anticipated under 35 U.S.C. § 102(b), in view of the patent of *Durand* (US 5,723,403) is traversed and reconsideration is respectfully requested. According to the Official Action, *Durand* discloses a process for producing a catalyst having a catalytically active phase deposited on a support with an open porosity of 80 to 99.9% which is formed of a monolithic structure or braided or interlocked fibers. The process is carried out by preparing an aqueous suspension containing particles of at least one refractory inorganic oxide and optionally at least a part of a catalytically active phase containing at least one catalytically active element. The open porosity of the support is filled at least partially with the suspension and the excessive suspension is removed by centrifuging. This is followed by thermal treatment to obtain a support coated with a wash coat. The coated support is then impregnated with a solution containing any remainder of the catalytically active phase and then thermal activation follows.

Durand fails to disclose a substantially nonporous inorganic support material having a BET surface area of less than 80 m²/g. In applicants' invention, the suspension that is supplied to the nonporous inorganic support contains the catalytically active metal compound which is water soluble and a substantially water insoluble compound which can be silica, alumina, titania or zirconia. This is followed by drying the suspension on the support material and then activating in a reducing gas stream.

It should further be noted that there is no disclosure in the *Durand* patent of support material which has a diameter of 0.5 mm to 50 mm; see Claim 39. Neither is there mention

made of the BET surface area being less than $10 \text{ m}^2/\text{g}$ (see Claim 40). Although the *Durand* patent mentions that the particles in the suspension are of a size less than 500 microns, applicants have noted a considerably smaller range as set forth in Claims 49 and 50; namely, 15 microns and from 3 to 7 microns (Claim 50). Claim 51 specifies that the BET surface area of the water insoluble coating compound is from $50 \text{ m}^2/\text{g}$ to $500 \text{ m}^2/\text{g}$ which is not described in the *Durand* patent. Neither is there a disclosure of the compacted density of the insoluble coating compound being from 10 g/l to 800 g/l as set forth in Claim 52. Further details of applicants' invention are set forth in dependent Claim 53, which specifies the weight ratio of the water soluble noble metal compound to the insoluble coating compound is from 0.1:1 to 5:1. Note also, the weight ratio of the noble metal compound to the insoluble coating compound recited in Claim 54 as 0.5:1 to 2:1. Claim 55 specifies the weight ratio of noble metal compound to the total weight of the shell-type catalyst ranging from 0.0001:1 to 0.02:1. Claim 57 specifies the thickness of the coating shell of the catalyst being from 0.1 micron to 20 microns. Thus, there are numerous features of applicants' invention which are not anticipated by *Durand* and, consequently, applicants respectfully submit that *Durand* does not anticipate Claims 34 to 60, as alleged in the Official Action.

It should be noted that the *Durand* patent shows that the supports for their catalysts have a porous nature. For example, reference is made to col. 1, lines 55 to 59, which speak of the porosity of the coated support. See also col. 2, lines 1 and 2, which refer to the open porosity of the support being filled by the suspension. Still further, reference is made to col. 2, beginning at line 30 of the *Durand* patent, which states that the supports can be in the form of fabrics or foams. Please note, in particular, col. 2, beginning at line 41, which discloses one of the parameters that characterizes the supports of *Durand* is their open porosity which is defined by the equation set forth in line 45, col. 2. Note that the porosity is said to be between 80 and 99.9%.

In contrast, applicants claims clearly state that the support is a substantially nonporous inorganic support. To that end, *Durand* reveals that the first step in preparing the catalyst is to wet the support with a large excess of suspension containing particles of the inorganic oxide and optionally the catalytically active agent. This is done by immersing the support in the suspension or by injecting under pressure or by suction under partial vacuum. See, col. 2, line 53.

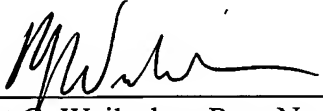
App. No. 10/628,425
Amend. dated Sept. 2, 2004
Resp. to Office Action dated June 2, 2004

Accordingly, it is respectfully submitted that *Durand* fails to anticipate the claimed subject matter because of the lack of disclosure of a critical element of applicants' invention.

Favorable action at the Examiner's earliest convenience is respectfully requested.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By: 
Robert G. Weilacher, Reg. No. 20,531

Suite 3100, Promenade II
1230 Peachtree Street, N.E.
Atlanta, Georgia 30309-3592
Telephone: (404) 815-3593
Facsimile: (404) 685-6893